

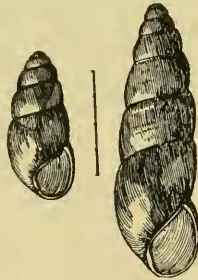
ON AN ABNORMAL SPECIMEN OF *COCHLICOPA LUBRICA*.

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Read 11th May, 1917.

WHILE searching in an old hedgebank at Radlett, in the parish of Aldenham, Hertfordshire, on April 22nd, 1917, I came across the remarkable snail which is here described. It was crawling about in a tuft of moss, was quite lively, and showed no difficulty in managing the large shell. Other species present in the immediate vicinity were *Limax agrestis*, *Arion ater*, *A. circumscriptus*, *A. hortensis*, *Pyramidula rotundata*, *Theba cautiana*, *Polita nitidula*, *P. cellaria*, *P. alliaria*, *P. rogersi*, *P. pura*, *Clausilia rugosa*, and *Cochlicopa lubrica*.

This shell differs from a normal *Cochlicopa lubrica* in being 11.1 mm. long and 3.4 mm. in diameter; it has about seven whorls or rather more. The peristome is not thickened or coloured, indicating either growth was not complete, or that for some reason the specimen was constitutionally unable to produce the usual termination for its shell building. At the fourth whorl from the apex the shell shows what looks like a mended crack; if the animal had proceeded to form a peristome soon after reaching this point of development it might have produced a shell of nearly normal size and shape, and the scar may indicate some hesitation in the matter. Comparison of superimposed photographs shows without very much doubt that the apical whorls of the present specimen are as near identical in size and form with those of a normal *lubrica* as can be.



Scale line = 4 mm.

The radula is longer and wider than in *lubrica*, though this enlargement is not in proportion to the magnitude of the shell. The central uncus is longer and there are more admedians, more externals, and more rows. The total number of unci is therefore increased, roughly in proportion to the increased length of the shell.

	Length of Data of Radula.				Formula.	Total Teeth.
	Shell. Length	Width	Area			
	mm.	mm.	mm.	mm. ²		
Large specimen ...	11.1	1.61	0.55	0.89	16.11 c.	10.18 × 98 5488
Normal <i>lubrica</i> from ...	(a) 6.0	1.19	0.48	0.57	13.7 c.	8.13 × 75 3150
same locality ...	(b) 6.0	1.18	0.45	0.53	11.8 c.	8.12 × 74 2960

The body of the snail when extracted from the shell was not found to be disproportionately small, as I have previously found in extra large specimens of *Limnaea*. The anatomy was examined by serial sections; no gross abnormality was found, and the genitalia have the morphology normal to *lubrica*.¹ The genitalia are, however, small (smaller than in normal *lubrica*) and undeveloped, and the hermaphrodite gland is represented by a mass of reticular connective tissue without any trace of eggs, or spermatozoa, or of cells which might be presumed to be their precursors.

Assuming that the present specimen is in fact *C. lubrica*, it is evident it is monstrously large, the bulk being four or five times that of the normal shell. In the absence of definite signs of the termination of growth, it is difficult to be quite precise about the normal size and variability of *lubrica*, but there is a general consensus among the authorities who happen to be available that the normal length is about 6 mm.

To get some measure of the local size variation, the 67 largest specimens which seemed to be adult out of about 150 collected from the rejectamenta of the River Colne were examined; the mean was 5.7×2.4 ,² maximum 6.5×2.6 and 6.4×2.8 , minimum 5.0×2.3 , coefficient of variation 6.3. Taking the mean length as 6 mm., if the coefficient of variation were as much as 10, the greatest normal range would be about 4 to 8 mm., if it were 5 (a more likely figure) about 4.5 to 7.5 mm. In any case it is evident that the present specimen is definitely beyond the range of normal variation.

What appear to be similar monstrous forms have been noticed before. J. W. Taylor describes³ under the name *Azeca elongata* two specimens of *A. tridens* (?) 9×2.5 mm. (as against a normal measurement of about 6.25×2.5) with $9\frac{1}{2}$ instead of 7 whorls, one from North Wales and one from Yorkshire; J. W. Jackson has a holocene *lubrica* (?) 10 mm. long from the talus of a cave at Clapham in Yorkshire.⁴ It is perhaps significant that in each case only a single specimen was found and that all these concern allied forms. I know of no obviously parallel case among other land mollusca, though Mr. Tomlin suggests that the shell he described⁵ as *Vertigo heldi* was a similarly monstrous *V. pygmaea*.

For the present I prefer to regard my specimen as a form of *Cochlicopa lubrica* until more is known as to its nature. It may well be that these sporadic giants represent an attempt or a tendency

¹ See Sternberg's figure in his *Fauna of Denmark: Land Mollusca*. Ihering's figure reproduced by Taylor (*Monograph*, vol. i, 1900, p. 356) is incorrect. Moquin-Tandon's figure (*Histoire*, ii, 1855, pl. xxii, fig. 17) is right, except that he omits the diverticulum on the duct of the spermatheca.

² Mean sizes determined from specimens as collected are generally somewhat less than those in the textbooks, which are presumably taken from picked specimens.

³ *Naturalist*, 1897, p. 75.

⁴ *Journal of Conchology*, vol. xiv, 1914, p. 238.

⁵ *Journal of Conchology*, vol. x, 1903, p. 307.

on the part of *tridens* and *lubrica* to divide into two species with the same sort of relationship as *Ena montana* and *E. obscura*,¹ and the varietal name *og*,² which I would propose for this form, must not be taken as implying that it is residual rather than nascent. On the other hand the absence of definite gigantism in the earlier stages of growth, the apparent break between the normal and abnormal parts and the absence of ova and spermatozoa suggest that it may belong to one of the types of abnormal somatic growth which are known to be associated with irregular developments and sexual cells.

The specimen has been deposited in the collection of the Conchological Society in the Manchester Museum.

¹ The similarities and differences in the radulæ of these two species are just the same as in *og* and *lubrica*.

² "For only Og, King of Bashan, remained of the remnant of giants," Deuteronomy iii, 11.